

ABSTRACT OF THE DISCLOSURE

The present disclosure provides evidence that actin degradation, in particular to produce a proteolytic fragment of about 14 kDa, is an important marker of muscle protein wasting. Muscle biopsy samples from a patient suffering from, susceptible to, or treated for a catabolic condition are tested for the production of an actin cross reacting protein of about 14 kDa, as estimated by SDS-PAGE. The presence of this actin fragment is diagnostic of muscle protein wasting (catabolism) in a muscle biopsy sample. Where a treatment for the catabolic disorder and/or muscle protein wasting is given, the failure to observe reductions in the amount of the actin degradative product is diagnostic of a treatment which is not effective to ameliorate or prevent the wasting. Animal models in which there is muscle protein wasting, e.g., streptozotocin-treated diabetic rates, can be used to identify inhibitors of wasting by reduction in actin fragments in muscle biopsy specimens of treated animals. Inhibitors identified in an animal model (or a cell culture model) can be used to prevent or decrease muscle wasting in a patient with a catabolic illness or used to increase muscle mass in a normal human or animal, an animal or human recovering from a catabolic illness or in a farm animal.